1991 Statistical Report

Sexually Transmitted Disease Control

Alberta
HEALTH

92-07112/

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Executive Summary

Sexually Transmitted Disease (STD) Services provides a comprehensive program for the control of STD in Alberta. The 1991 report provides data on the distribution and trends of the notifiable infections as well as information on programs for the control of STD including HIV and AIDS.

The list of notifiable STD includes non-gonococcal urethritis/mucopurulent cervicitis (NGU/MPC), *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, syphilis, chancroid and lymphogranuloma venereum. Although AIDS is not reportable to STD Services, information on this disease is also included in this report.

The most frequently reported infection during 1991 was *Chlamydia trachomatis* with an incidence of 275.07 per 100,000 population. This was followed by NGU/MPC with a rate of 134.28 per 100,000 population. Although the most frequently reported infections are *Chlamydia trachomatis* and NGU/MPC, these two infections have decreased 8% and 10% respectively over the previous year. In contrast, the incidence of *Neisseria gonorrhoeae* has remained the same with a rate of 55.24 per 100,000 population. Of concern is the increasing gonococcal resistance to penicillin and tetracycline with an overall true resistance of 10.8% in 1991. The incidence of syphilis continues to be low with 74 cases and a rate of 2.93 per 100,000 population.

Diagnostic and treatment services are available through clinics in Calgary and Edmonton. The Fort McMurray Clinic operates under the auspices of the health unit serving that city and surrounding areas. There were 23,978 clients seen in the three clinics, a 6.6% increase from the previous year with the greatest increase in female clinic attendees. Patients with HIV-related concerns accounted for 27% of all visits in Edmonton and Calgary.

The Education Unit is responsible for dissemination of STD/HIV/AIDS information to both public and professional audiences. This is carried out by direct education, facilitated by nurse educators, and through information provision for individual clients on the STD/HIV/AIDS information line. A total of 772 sessions reached 14,947 people. Small group sessions to facilitate behavioral learning resulted in a decrease in attendance from previous years. Calls on the computer-answered information line and those answered personally by a nurse educator increased by 30% and 9% respectively in 1991 demonstrating the need and acceptability of this service.

The Clinical Investigation Unit, with a staff complement of one laboratory technician and a clinical research nurse, completed a successful year of operation actively participating in STD-related research.

STD Services also provides consultation to physicians and epidemiologic services that include contact tracing for STD including HIV infections. These services are carried out collaboratively by the central control office in Edmonton, the clinics and a mobile unit.

Incidence of *Neisseria gonorrhoeae*

In 1991, the incidence of *Neisseria gonorrhoeae* was unchanged from the previous year.

This plateau is in sharp contrast to the 12 – 38% decreases experienced in the previous eight years. Females aged 15 – 19 continue to have the highest age and gender specific rate of 263.27 per 100,000 population. However, this is an 8% decrease from 1990 likely reflecting an increased awareness and education in this group. Of concern is the increased incidence in males from age 15 – 29. The increase of 25% in 15 – 19 year old males, 13.5% in 20 – 24 year old males and 16% in 25 – 29 year old males is unexpected.

Of the 1393 incidents of *Neisseria gonorrhoeae*, gonococcal sensitivity to penicillin and tetracycline is known for 80%. In this group where sensitivity is known, there were 59 isolates demonstrating resistance to penicillin, 89 resistant to tetracycline and 32 resistant to both penicillin and tetracycline. Overall, true resistance to penicillin and tetracycline was 10.8% an increase of 17% from 1990.

The 52 cases of penicillinase producing *Neisseria gonorrhoeae* (PPNG) was the second highest number of reports since the first isolate in 1977. These cases were spread over 12 months. However, 35 (67%) occurred in the last five months, associated with an outbreak in the Edmonton area.

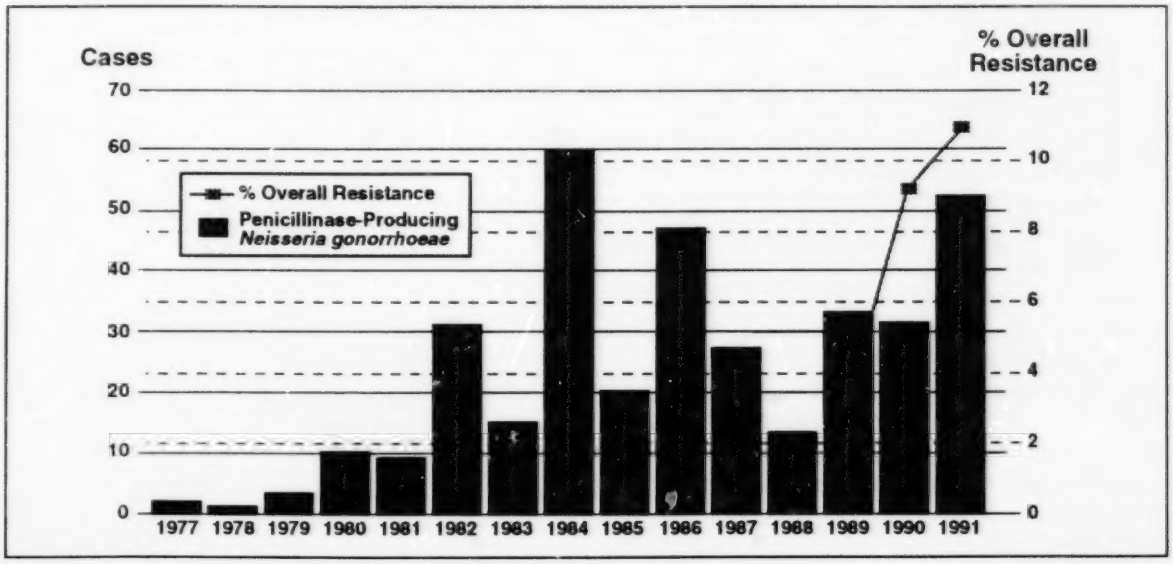
Increased resistance to penicillin and tetracycline has dictated a change in antibiotic therapy to treat not only penicillinase producing *Neisseria gonorrhoeae* but also chromosomally mediated resistant *Neisseria gonorrhoeae* (CMRNG) and tetracycline resistant *Neisseria gonorrhoeae* (TRNG).

Table 1: *Neisseria gonorrhoeae* Cases and Rates by Age and Sex, Alberta, 1991

	Male		Female		Total	
Age	Cases	Rate*	Cases	Rate*	Cases	Rate*
< 1	1	.65		6.2	1	3.35
1 – 4			1		1	
5 – 9						
10 – 14	1		17		18	
15 – 19	117	126.76	233	263.27	350	193.58
20 – 24	257	256.46	219	227.17	476	242.11
25 – 29	178	157.52	88	77.73	266	117.59
30 – 39	137	57.56	63	27.15	200	42.55
40 – 59	62	22.82	11	4.18	73	13.65
60+	5	3.48			5	1.57
Age not stated	2		1		3	
Total	**760**	**60.13**	**633**	**50.32**	**1393**	**55.24**

*Rate per 100,000 population

Figure 1: Cases of Penicillinase Producing *Neisseria gonorrhoeae* (PPNG) in Alberta, 1977 – 1991



Incidence of Syphilis

Syphilis continues its low incidence in Alberta with only 74 cases and a rate of 2.93 per 100,000 population. Infectious cases (primary, secondary, and early latent) provide the mechanism for spread of this disease. However, only 16% of cases in 1991 were classified as infectious. This reflects the level of control presently experienced and also compares favourably to the epidemic year of 1984 when the percentage of infectious cases was 83.

Non-infectious late latent syphilis accounted for 55 (74%) of the cases. Of this number 25 (45%) were diagnosed as a result of screening during an Immigration medical examination. An additional 13 (24%) were found in recent immigrants.

The one case of congenital syphilis was in an infant whose mother had little prenatal care and was found to have early latent syphilis at the time of delivery. Five of the six cases of neurosyphilis were found in persons from the southern half of the province. Three individuals were asymptomatic with two known to be HIV seropositive. The remaining three symptomatic persons were all over the age of 64.

Table 2: Syphilis Cases and Rates by Age and Sex, Alberta, 1991

	Male		Female		Total	
Age	Cases	Rate*	Cases	Rate*	Cases	Rate*
< 1			1	4.65	1	2.27
15 – 19			3	3.38	3	1.65
20 – 24	3	2.99	1	1.03	4	2.03
25 – 29	8	7.07	1	.88	9	3.97
30 – 39	18	7.56	5	2.15	23	4.87
40 – 59	10	3.68	5	1.9	15	2.8
60+	8	5.57	11	6.29	19	5.97
Total	**47**	**3.71**	**27**	**2.14**	**74**	**2.93**

*Rate per 100,000 population

Incidence of *Chlamydia trachomatis*

The overall incidence of *Chlamydia trachomatis* declined 8%, from 300.1 to 275.07 per 100,000 population. The highest age and gender specific rate is once again found in young women aged 15 – 19 with a rate of 2337.85 per 100,000 population followed by women aged 20 – 24 with a rate of 2091.28 per 100,000.

A pattern similar to the one described for *Neisseria gonorrhoeae* of decreasing incidence in women is demonstrated by declines of 3%, 5% and 13%, in 15 – 19, 20 – 24 and 25 – 29 year old women respectively. The incidence in males 20 – 29 also declined by 11%. However, there was a 13% increase in males 15 – 19 as was also seen in *Neisseria gonorrhoeae*. This suggests an increase in unprotected sexual activity in this group.

The 3:1 ratio of disease in women compared to men reflects the search for asymptomatic women through screening when the health care system is accessed for other reasons such as birth control counselling. However, there continues to be a large number of male partners of these positive women who are not being tested and likely not treated. This adds significantly to the pool of untreated disease and continuation of the cycle of re-infection.

The six cases in children under age one are attributed to perinatal transmission. Although the decrease in incidence from 1990 is significant, screening of high risk pregnant women must be pursued.

As well, vigilance by primary health care providers must continue, to maintain the downward trend of cases in children aged 1 – 9, where sexual abuse is the probable source of infection.

Table 3: *Chlamydia trachomatis*, Cases and Rates by Age and Sex, Alberta, 1991

	Male		Female		Total	
Age	Cases	Rate*	Cases	Rate*	Cases	Rate*
< 1	2	98	4	32.74	6	16.45
1 – 4			3		3	
5 – 9			1		1	
10 – 14	1		87		88	
15 – 19	307	332.61	2069	2337.85	2376	1314.15
20 – 24	697	695.6	2016	2091.28	2713	1379.95
25 – 29	362	320.35	690	609.54	1052	465.07
30 – 39	234	98.31	336	144.82	570	121.27
40 – 59	46	16.93	46	17.49	92	17.2
60+	2	1.39	6	3.43	8	2.51
Age not stated	4		23		27	
Total	**1655**	**130.95**	**5281**	**419.89**	**6936**	**275.07**

*Rate per 100,000 population

Incidence of Non-gonococcal Urethritis/Mucopurulent Cervicitis (NGU/MPC)

There was a 10% decrease in incidence of NGU/MPC in 1991. The overall rate declined from 149.52 to 134.28 per 100,000 population. This is reflected in a decrease in the number of cases and rates for all age categories of males. However, although the overall incidence in females decreased by 4%, there were increases in females aged 10-14, 15-19, and 30-39.

The highest age and gender specific rates are once again males aged 20 – 24 and 25 – 29 with rates of 724.55 and 509.73 per 100,000 population respectively. As well, the male to female ratio of 2.1:1 is unchanged from previous years and when compared to that of *Chlamydia trachomatis* (1:3) again emphasizes the difference in diagnosis in men and women.

Table 4: Non-gonococcal Urethritis/Mucopurulent Cervicitis (NGU/MPC) Cases and Rates by Age and Sex, Alberta, 1991

	Male		Female		Total	
Age	**Cases**	**Rate***	**Cases**	**Rate***	**Cases**	**Rate***
10 – 14	4	4.28	13	14.75	17	9.36
15 – 19	251	271.93	311	351.41	562	310.84
20 – 24	726	724.55	336	348.54	1062	540.18
25 – 29	576	509.73	179	158.12	755	333.77
30 – 39	517	217.22	179	77.15	696	148.08
40 – 59	165	60.75	48	18.25	213	39.84
60+	17	11.84	1	0.57	18	5.65
Age not stated	45		18		63	
Total	**2301**	**182.06**	**1085**	**86.26**	**3386**	**134.28**

*Rate per 100,000 population

Notification by Reporting Agency

The distribution of notifications received from physicians and the STD clinics for *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and non-gonococcal urethritis/mucopurulent cervicitis (NGU/MPC) is unchanged from 1990.

Of the 1393 cases of laboratory confirmed *Neisseria gonorrhoeae*, 73% were from physicians and 27% from the three clinics in Calgary, Edmonton and Fort McMurray. 129 of the 1015 positive laboratory reports for *Neisseria gonorrhoeae* taken by physicians did not result in a notification being recieved. This represents a 13% deficit in reporting, a significant increase from the previous year.

Notification of laboratory confirmed *Chlamydia trachomatis* was received for 6936 patients. Of these, 88% were for patients seen by physicians and 12% from the STD clinics. Similar to *Neisseria gonorrhoeae*, there was a 13% deficit in reporting by physicians. With the 8% decrease in disease incidence, there were decreases in notifications from both physicians and STD clinics of 5% and 14% respectively.

In contrast to *Neisseria gonorrhoeae* and *Chlamydia trachomatis*, the STD clinics report a significantly larger percentage of cases of NGU/MPC. The clinics combined reported 1914 or 56.5% and physicians reported 43.5%.

Figure 2: Percentage of Reported Cases of *Neisseria gonorrhoeae* by Reporting Agency, Alberta, 1991

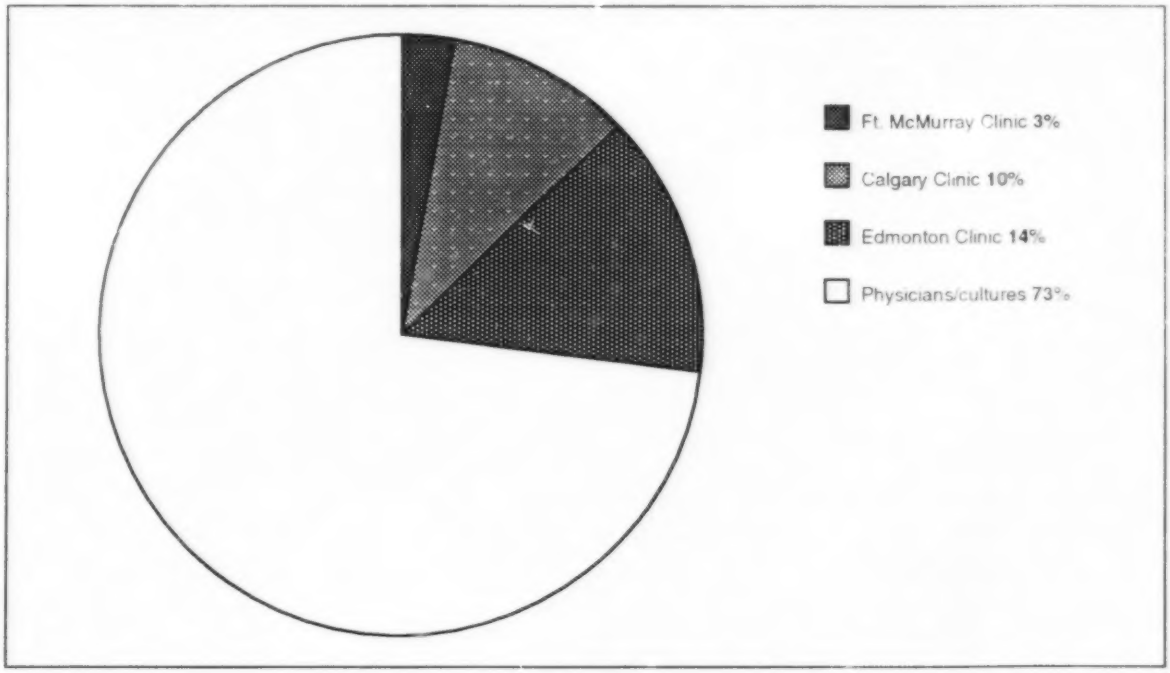


Figure 3: Percentage of Reported Cases of *Chlamydia trachomatis* by Reporting Agency, Alberta, 1991

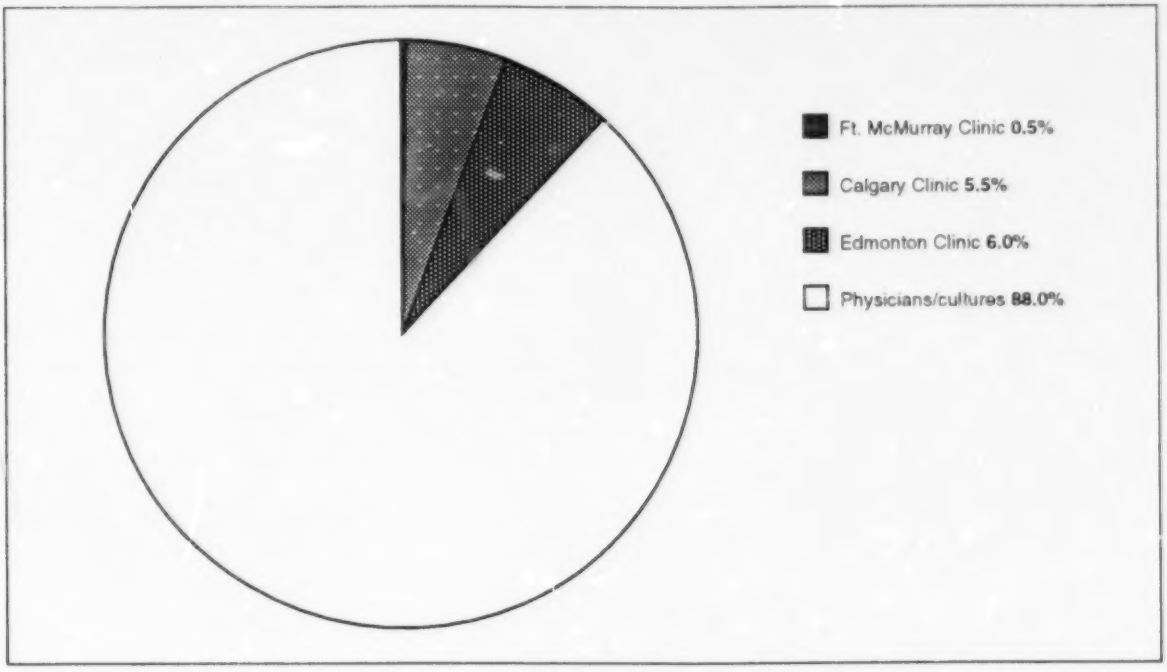
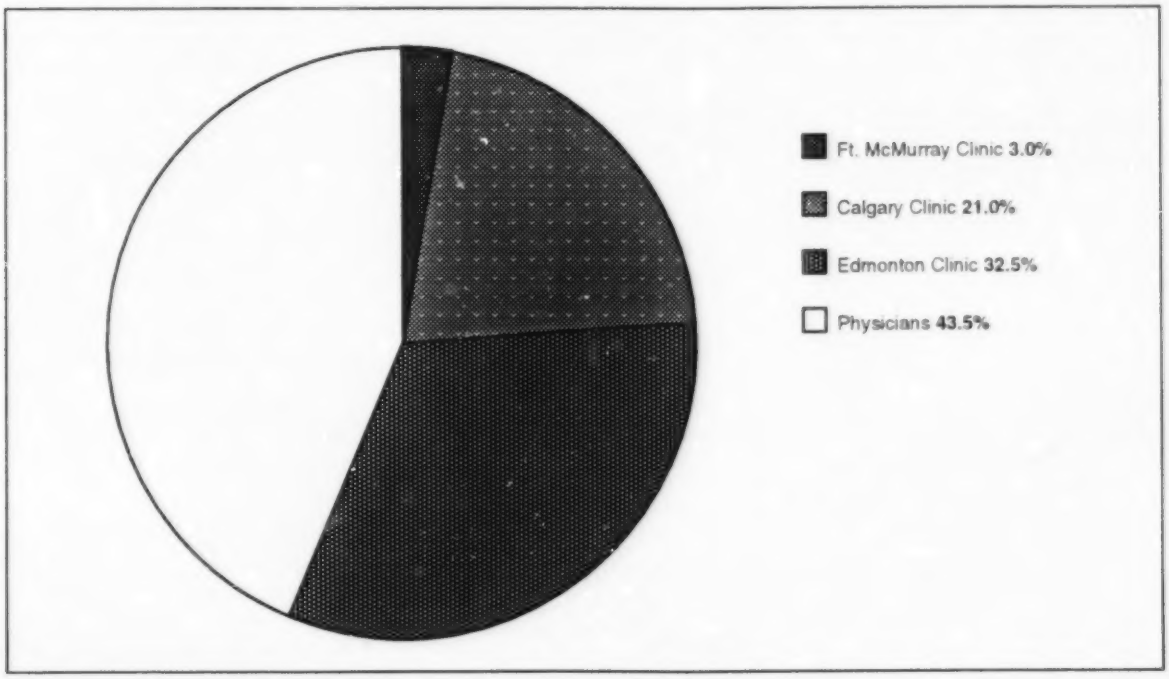


Figure 4: Percentage of Reported Cases of Non-gonococcal Urethritis/Mucopurulent Cervicitis by Reporting Agency, Alberta, 1991



Trends in Sexually Transmitted Diseases Since 1950

The true incidence of STD is underestimated due to under reporting and the large number of non-notifiable diseases. At minimum, non-notifiable infections such as *Herpes simplex* and *Human papilloma virus* (venereal warts) likely occur with the same frequency as reportable diseases.

The incidence of *Neisseria gonorrhoeae* plateaued in 1991 in contrast to dramatic decreases experienced in the previous eight years. As well, the overall resistance to penicillin and tetracycline increased from 9.2% in 1990 to 10.8% in 1991. This resulted in a change in primary gonococcal therapy in January 1992.

Syphilis continued its low incidence with 74 cases and a rate of 2.93 per 100,000 population. Only 16% of these 74 cases were classified as infectious (primary, secondary and early latent). Of the remaining non-infectious cases, 38 or 51% were late latent disease found in new and recent immigrants.

Chlamydia trachomatis and non-gonococcal urethritis/mucopurulent cervicitis (NGU/MPC) showed similar declines of 8% and 10% respectively. These STD have shown gradual declines in incidence since reporting began in 1986.

Figure 5: Incidence Rates per 100,000 Population for Syphilis, *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and Non-gonococcal Urethritis/Mucopurulent Cervicitis (NGU/MPC), Alberta, 1950 – 1991

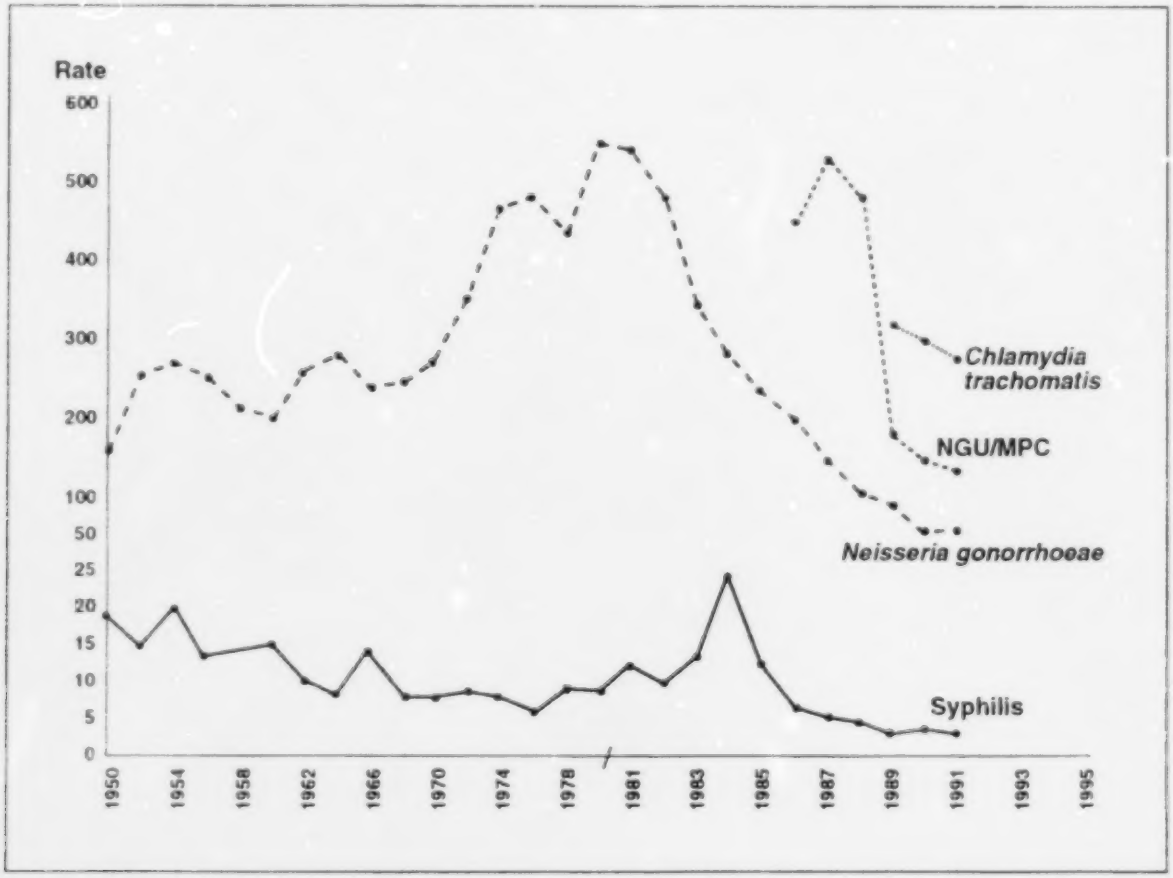


Table 5: Syphilis, *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and Non-gonococcal Urethritis/ Mucopurulent Cervicitis Cases and Rates per 100,000 Population, Alberta, 1950 – 1991

	Gonorrhoeae		Syphilis		NGU/MPC		Chlamydia	
Year	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
1950	1981	152.0	165	18.1				
1952	2450	251.8	135	13.9				
1954	2819	266.7	212	20.1				
1956	2842	253.0	145	12.9				
1958	2548	211.3	167	13.8				
1960	2560	198.3	186	14.4				
1962	3560	260.0	134	9.8				
1964	3953	276.7	110	7.7				
1966	3447	235.7	208	14.2				
1968	3729	244.4	118	7.7				
1970	4290	268.1	134	8.0				
1972	5842	353.2	143	8.6				
1974	8036	466.9	136	7.8				
1976	8657	480.3	108	5.7				
1978	8451	430.9	165	8.4				
1980	11474	547.8	181	8.6				
1981	11692	540.2	255	11.8				
1982	11086	476.3	225	9.7				
1983	8021	339.7	306	13.0				
1984	6712	279.9	574	23.9				
1985	5690	233.1	290	11.9				
1986	4991	203.0	162	6.7	11051	448.7		
1987	4107	146.9	132	5.5	12753	527.9		
1988	2536	104.2	110	4.6	11567	475.5		
1989	2217	91.2	74	3.0	4277	175.9	7727	317.95
1990	1380	55.9	90	3.6	3693	149.5	7412	300.1
1991	1393	55.2	73	2.9	3386	134.3	6936	275.07

Human Immunodeficiency Virus (HIV) Serologic Testing

HIV seropositivity is not a notifiable condition in Alberta. Serologic testing for HIV is performed by the Provincial Laboratories of Public Health in Edmonton and Calgary and the Canadian Red Cross Blood Transfusion Service Laboratories. These laboratories report non-nominal epidemiologic information to Communicable Disease Control and Epidemiology of Alberta Health.

The number of tests performed in 1991 at both locations was significantly higher over the previous year. The Provincial Laboratories experienced a dramatic increase of 53% although the seropositive rate declined 1%. This clearly reflects increased testing of individuals at lower risk. For the first year since testing by the Red Cross was initiated, no positive donors were found. This reaffirms the effectiveness of predonation counselling and self deferral of individuals with risk factors.

Homosexual men continue to comprise the largest group of seropositive individuals. Injection drug users again demonstrated the greatest increase in proportion positive from 15 to 27, an 80% increase. Individuals who acquired their infection through blood transfusions decreased by a further 25% as one would expect.

A cumulative total of 72 samples from females have been found to be HIV seropositive. Since reporting is non-nominal, this does not necessarily indicate 72 infected individuals. No risk information was available for 16 females. Of the remaining 56, 31 acquired infection through heterosexual contact, 18 through receipt of blood or blood products, 6 by injection drug use and the remaining case was from an endemic area.

The self-selection of those seeking testing makes any generalizations about prevalence of infection in risk groups of limited value. However, the level of infection appears to be decreasing in homosexual men, but increasing among heterosexuals, females and injection drug users. Persons who continue to engage in unprotected sexual contact with multiple partners must recognize that they are placing themselves at risk.

Table 8: HIV Serologic Testing, Alberta, 1986 – 1991

	Provincial Laboratory		Red Cross	
Year	Total Tested	Number Positive (%)	Total Tested	Number Positive (%)
1986	2156	212 (9.8)	156304	26 (0.017)
1987	12862	319 (2.5)	122443	6 (0.005)
1988	12786	232 (1.8)	123782	2 (0.002)
1989	13262	331 (2.5)	122342	6 (0.005)
1990	16612	253 (1.5)	125503	1 (0.001)
1991	25387	262 (1.0)	133444	0 (0.000)
Total	**83065**	**1609 (1.9)**	**783818**	**41 (0.005)**

Table 9: HIV Seropositivity by Risk Factor and Year, Alberta, 1986 – 1991

Risk Factor	1986	1987	1988	1989	1990	1991	Cumulative (%)
Homosexual	163	203	185	192	171	187	1101 (68.4)
Blood recipient	7	36	16	17	8	6	90 (5.6)
Heterosexual		6	4	8	10	13	41 (2.5)
Other	6	17	2	28	18	13	84 (5.2)
Injection drug use	2	5	5	8	15	27	62 (3.9)
Not stated	34	52	20	78	31	16	231 (14.4)
Total	**212**	**319**	**232**	**331**	**253**	**262**	**1609**

Acquired Immunodeficiency Syndrome (AIDS)

Since Alberta reported its first case of AIDS in 1983, there has been a cumulative total of 389 cases.

Throughout this section, the numbers have been updated to accurately reflect previously unreported cases diagnosed in earlier years. During 1991, there were 73 new cases, the identical number reported in 1990. For the second year since reporting began, there was no increase in the number of cases. Unfortunately experience from previous years suggest that, with the lag in disease notification, the figure of 73 new cases for 1991 will increase over the next few months. Nevertheless, figures are encouraging and likely reflect the use of effective drugs such as zidovudine on slowing the rate of progression of HIV infection.

On a regional basis, Calgary continues to have the highest new and cumulative number of cases in the province. However for the first time, the proportion of new cases fell in Calgary from 58% to 48% and rose in Edmonton from 28% to 43% for 1990 and 1991 respectively. The age distribution of patients at diagnosis has not changed.

The distribution of cases by risk behaviour or exposure did demonstrate some shifts in 1991. Homosexual men accounted for only 62% of new cases, the lowest proportion ever seen. Injection drug use, either alone or with a sexual risk factor, remained at the same level. The largest increase (from 1% to 5%) was seen in heterosexuals. Although the numbers are relatively small, this 400% increase is staggering and there is a concern that it will continue.

The primary presenting diagnosis has also not changed although the overall survival has fallen to 33%. This is a reflection of the large number of individuals diagnosed up to and including 1989, with the average survival after diagnosis rarely exceeding two to three years.

Figure 6: New AIDS Cases by Year of Diagnosis, Alberta, 1983 – 1991

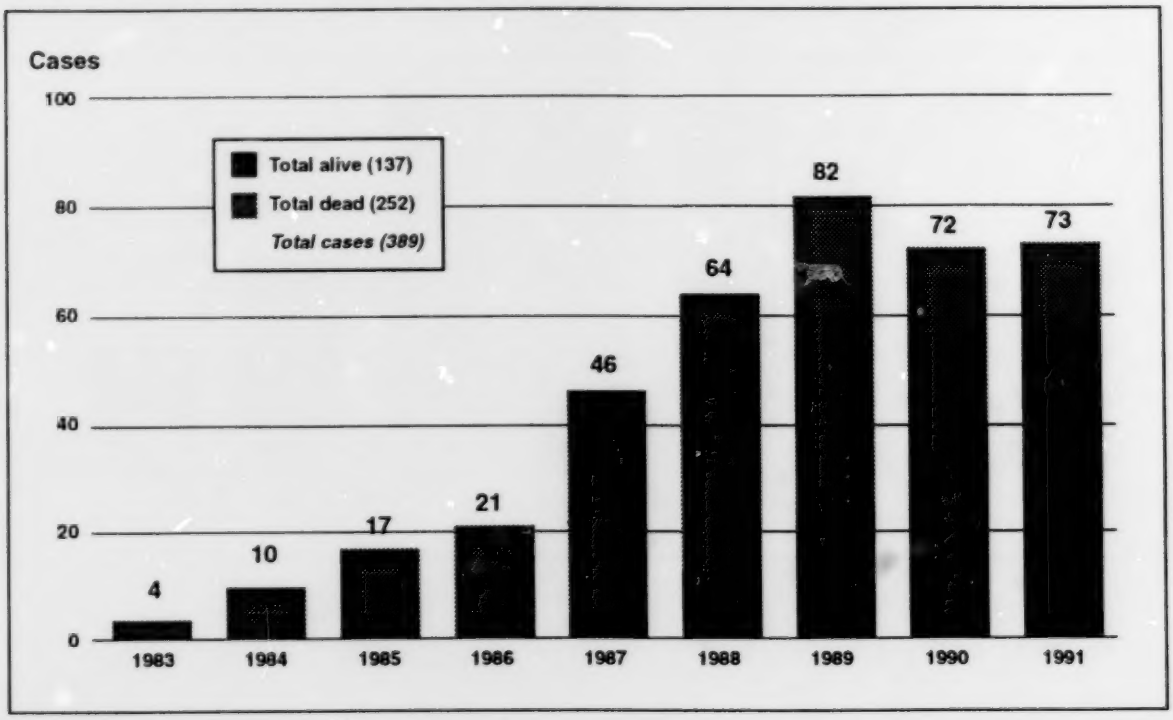


Table 6: New and Cumulative AIDS Cases by Location, Alberta, 1983 – 1991

Location	New Cases	(%)	Total Cases	(%)
Calgary	35	(48)	218	(56)
Edmonton	31	(43)	126	(32)
North*	4	(6)	21	(5)
South	3	(4)	24	(6)
Total	**73**		**389**	

*Refers to the City of Red Deer and north of the province

Table 7: AIDS Patients Primary Diagnosis and Status, Alberta, 1983 – 1991

	Total Cases		Status	
Primary Diagnosis	Number	(%)	Alive	Dead
Pneumocystis carinii pneumonia (PCP)	188	(48)	59	129
Kaposi's Sarcoma (KS)	48	(12)	18	30
PCP and KS	16	(4)	3	13
Other opportunistic infections	84	(22)	31	53
Other malignancies	14	(4)	7	7
HIV wasting	22	(6)	9	13
HIV encephalopathy	14	(4)	1	13
Other	3	(1)	1	2
Total	**389**		**129 (33%)**	**260 (67%)**

Figure 7: Age of AIDS Patients at Diagnosis, Alberta, 1983 – 1991

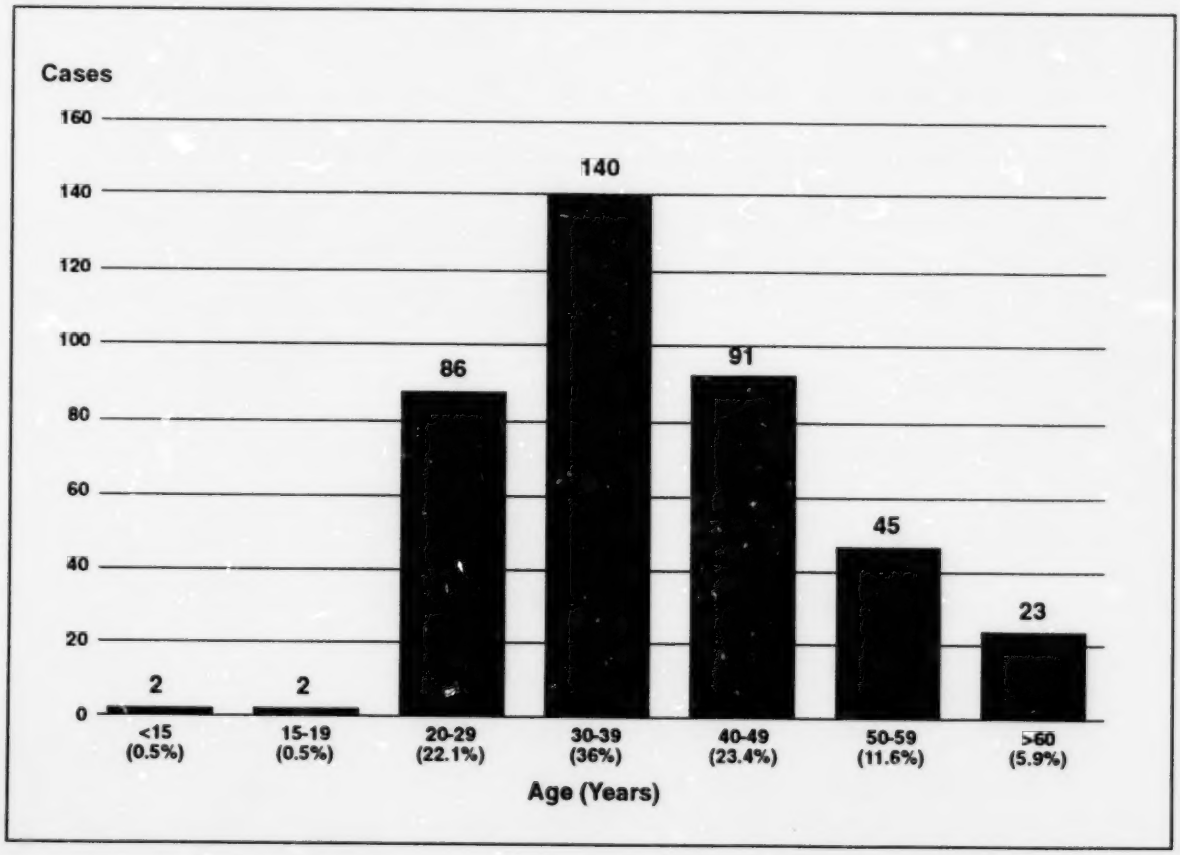


Figure 8: Cumulative AIDS Cases by Risk, Alberta, 1983 – 1991

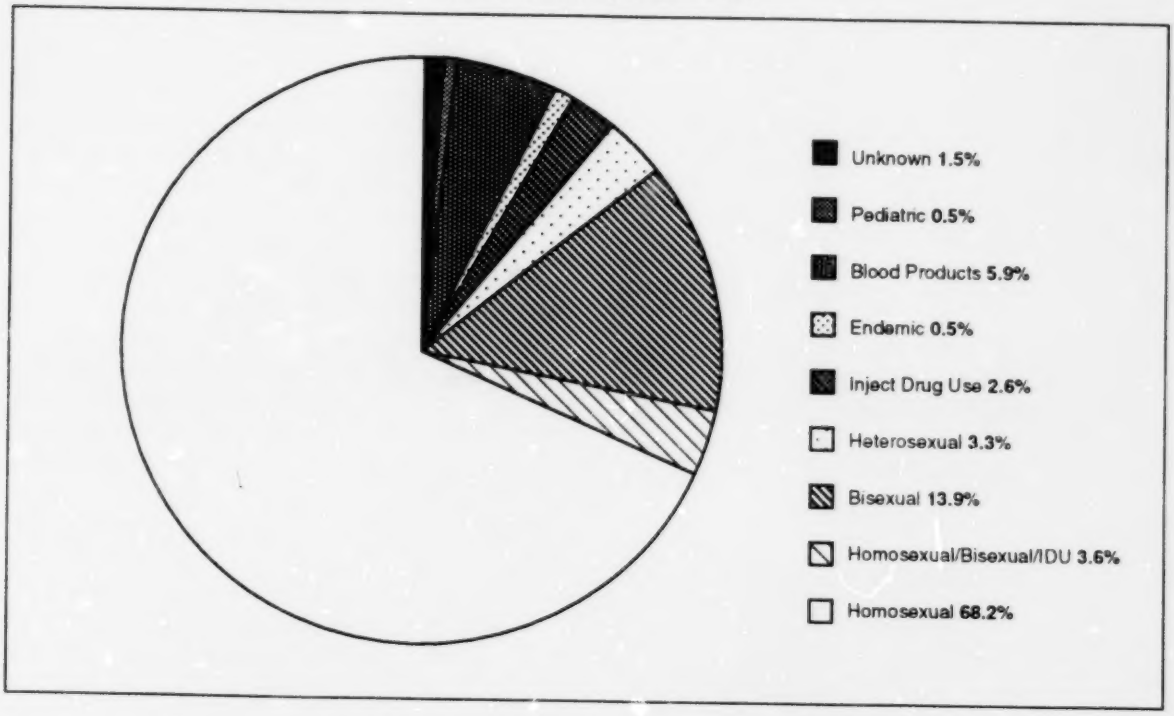
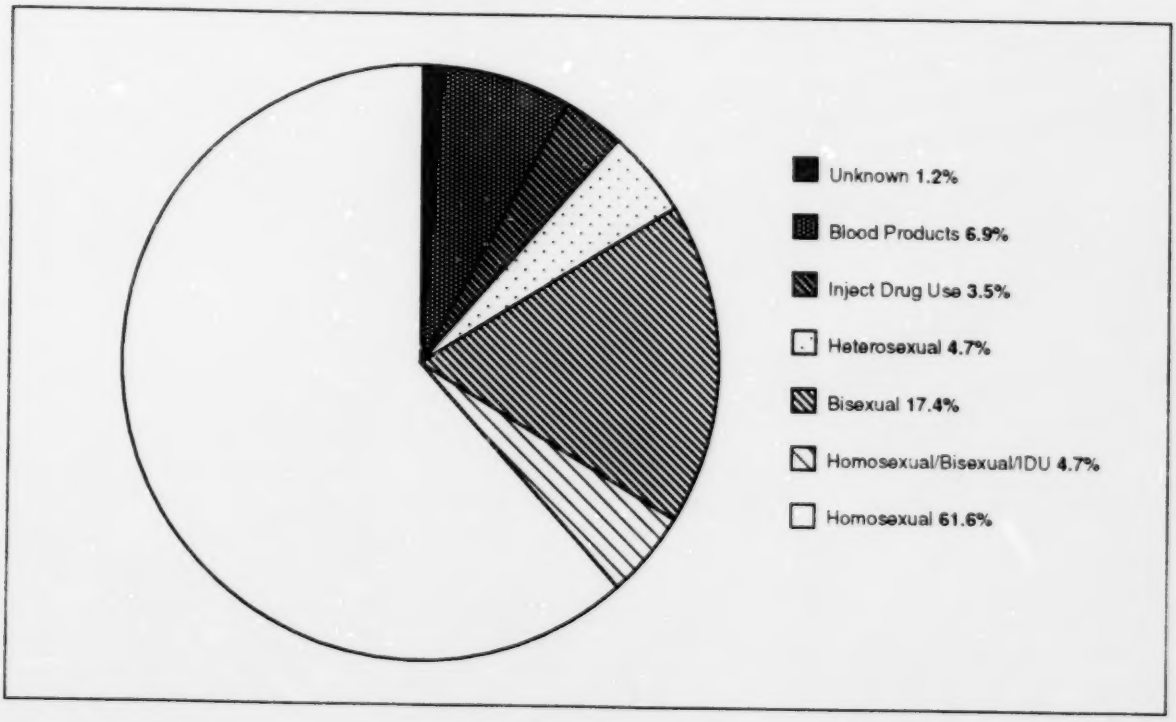


Figure 9: New AIDS Cases by Risk, Alberta, 1991



Contact Information and Investigations

Locating and investigating known sexual partners of STD is an important aspect of the case management of patients and in the control of these infections.

The amount of information and the quality of this information has declined in recent years. In 1991, reports were received for 11795 incidents of notifiable STD with information on 9484 contacts. Of this number, 5328 or 56% had sufficient information provided to initiate contact tracing. Unchanged from the previous year, physicians are able to elicit sufficient information on 0.3 individuals per notification and the clinics elicit information on 0.7 individuals per notification.

There was a 7% decrease in the number of investigations carried out. Of the 1624 contact investigations initiated, 81% were located.

The number of investigations carried out for positive laboratory tests decreased by 4% from the previous year. Investigation is initiated for every reactive syphilis serology where there is no recorded treatment. As well, individuals with laboratory confirmed *Neisseria gonorrhoeae* and *Chlamydia trachomatis* who are identified as being at a significant risk, and for whom treatment has not been confirmed, are also investigated. In 95% of these investigations individuals were located and treated appropriately within the year.

Table 10: Number of Contacts Listed on Notifications Received for Confirmed Cases of *Neisseria gonorrhoeae*, Non-gonococcal Urethritis/Mucopurulent Cervicitis, *Chlamydia trachomatis* and Syphilis, Alberta, 1991

Reporting Agency	Total Notifications Received	Contacts — Total Listed on Notification	Contacts — Sufficient Information for Investigation
Physicians	8621	5595	3221
Edmonton Clinic	1746	2137	933
Calgary Clinic	1247	1519	985
Ft. McMurray Clinic	181	233	189
Total	**11795**	**9484**	**5328**

Table 11: Number and Outcome of Investigations Carried Out by Sexually Transmitted Disease Clinics, Alberta, 1991

	Contact Investigations				Positive Tests* Investigations		
Clinics	Located	Closed/Unlocated	Remaining Open	Total	Completed	Remaining Open	Total
Edmonton	495 (83%)	90	12	597	647	8	655
Calgary	451 (85%)	70	9	530	565	16	581
Ft. McMurray	28 (47%)	17	14	59	5	17	22
Mobile	342 (78%)	59	37	438	884	78	962
Total	**1316 (81%)**	**236**	**72**	**1624**	**2101**	**119**	**2220**

*Follow-up to positive laboratory reports

Sexually Transmitted Disease Clinics — Patient Services

There was an overall increase of 6.6% in clinic attendance during 1991. The greatest increase was seen in female clinic attendees ranging from 7.9% in Edmonton to 9.5% in Calgary. The male:female ratio of patient visits was 1.8:1 for both Edmonton and Calgary and 1.1:1 for Ft. McMurray. New admissions increased 12% in Edmonton and Calgary but decreased 30% in Ft. McMurray.

In spite of decreasing disease incidence for *Chlamydia trachomatis* and syphilis, increasing patient visits reflects heightened awareness of sexually transmitted diseases but, in particular, HIV. The range of services included in HIV-related visits are HIV testing, including pre and post test counselling, as well as continuing care for HIV positive individuals. HIV-related visits increased by a range of 30% to 83% and accounted for 27% of all patient visits in Edmonton and Calgary. The increase in HIV testing was more marked in women than men with an overall increase in women of 69% versus 46% for men.

Both Edmonton and Calgary clinics are staffed with a clinic physician. In Edmonton, 10% of all patients attending the clinic were seen by a physician with a corresponding figure for Calgary of 7.1%. The striking male predominance, resulting in a male:female ratio of 7.1:1 and 5.8:1 in Edmonton and Calgary respectively, is attributed to patients attending the clinic for continuing HIV care.

Table 12: Patient Utilization of STD Clinics, Alberta, 1991

	New Admissions	HIV Related	Total Visits
Edmonton	3,724	3,647	13,456
Calgary	3,480	2,686	9,835
Fort McMurray	275	152	687
Total	**7,479**	**6,485**	**23,978**

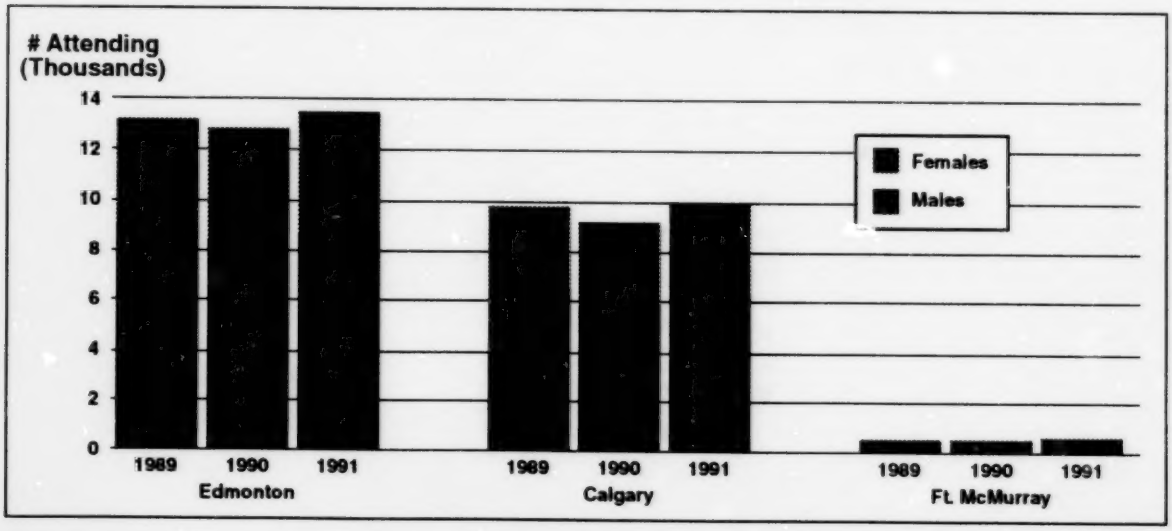
Table 13: HIV Related Visits at STD Clinics, Alberta, 1991

	Male	Female	Total
Edmonton	2645	1002	3647
Calgary	1849	837	2686
Fort McMurray	83	69	152
Total	**4577**	**1908**	**6485**

Table 14: Patient Visits at Physician Clinics, Alberta, 1991

	Male	Female	Total
Edmonton	1200	163	1363
Calgary	599	104	703
Total	**1799**	**267**	**2066**

Figure 10: STD Clinic Attendance, Alberta, 1989 – 1991



Sexually Transmitted Disease Clinics — Serologic Tests

The total number of serologic tests undertaken increased dramatically by 16.7%. This increase was largely due to HIV testing which correlates with the increase in patients accessing the clinics with HIV concerns. Despite an overall 53% rise in HIV testing, the proportion of positive results remained the same, reflecting a shift to screening of lower risk populations.

Hepatitis B serology also increased dramatically by 76.8%, reflecting increasing awareness of risk groups. The clinics also began to actively screen individuals who may have been exposed through non sexual means, to decrease the risk of future sexual transmission.

The number of syphilis serologies increased by 5.8% which is constant with the percent increase in patient visits.

Table 15: Serologic Testing at STD Clinics, Alberta, 1991

		Syphilis		HIV Antibody		Hepatitis B	Total
		Male	Female	Male	Female		
Edmonton	Taken	3690	2146	922	544	941	8243
	Positive (%)	170 (5)	84 (4)	56 (6)	1 (0.18)		
Calgary	Taken	3029	1611	736	454	327	6157
	Positive (%)	143 (5)	49 (3)	20 (3)	2 (0.4)		
Ft. McMurray	Taken	274		65	12	74	425
	Positive (%)	2 (1)		0	0		
Total		**10750**		**2733**		**1342**	**14825**

Sexually Transmitted Disease Clinic Laboratory Investigations

The most frequently performed laboratory procedures carried out in each clinic are demonstrated in the accompanying table.

Each STD clinic has onsite access to microscopes. All nurses have the capability to prepare and interpret methylene blue and gram staining of urethral and endocervical smears, darkfield microscopy and wet mount examinations. All other laboratory procedures are carried out by the Provincial Laboratories in Calgary and Edmonton.

Laboratory utilization for 1991 is clearly a reflection of disease incidence. The number of specimens obtained for detection of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* remained stable. The large number of pharyngeal specimens resulted from participation in a study of *Neisseria meningitides*.

The prevalence of *Chlamydia trachomatis* has decreased among women in both Edmonton and Calgary to 8.2% and 6.5% respectively. For males, the rate in Edmonton remained stable while Calgary experienced a decline to 6.9% from 7.5%. The prevalence of *Neisseria gonorrhoeae* remains stable at all three clinics.

The practice of offering women a pap smear continues and the small increase is simply a reflection of increased patient visits.

Table 16: Sexually Transmitted Disease Clinics Laboratory Investigations, Alberta, 1991

			Edmonton Clinic		Calgary Clinic		Ft. McMurray Clinic		Total	
			Taken	Positive	Taken	Positive	Taken	Positive	Taken	Positive
Urethral Smear	– *Neisseria gonorrhoeae*			147		63		36		246
	– Non-gonococcal urethritis		3369 1309		1603 503		168 64		5140 1876	
Cultures — *Neisseria gonorrhoeae*										
	– Male	urethra	3466	136	3137	70	204	18	6807	224
		rectal	208	2	113	6	4	0	325	8
		pharynx	4067	18	1330	5	18	0	5415	23
		Total	**7741**	**156**	**4580**	**81**	**226**	**18**	**12547**	**255**
	– Female	cervix/urethra	4847	109	2164	40	307	5	7318	154
		rectal	4137	42	2114	45	163	1	6414	88
		pharynx	3101	24	866	5	46	0	4013	29
		Total	**12085**	**175**	**5144**	**90**	**516**	**6**	**17745**	**271**
Chlamydia trachomatis Identification										
	– Male	urethra	3661	257	3094	215	184	17	6939	489
	– Female	cervix/urethra	2505	205	1964	128	302	25	4771	358
Darkfield Microscopy	– T.pallidum		25	0	2	0	0	0	27	0
Herpes simplex	– Male	urethra	200	16	16	3	1	0	217	19
		lesion	316	127	271	107	12	1	599	235
		Total	**516**	**143**	**287**	**110**	**13**	**1**	**816**	**254**
	– Female	cervix	556	23	218	35	22	1	796	59
		lesion	413	107	314	118	17	1	744	226
		Total	**969**	**130**	**532**	**153**	**39**	**2**	**1540**	**285**
Trichomonas vaginalis	– Male		325	1	137	0	168	0	630	1
	– Female		1196	86	2056	36	162	2	3414	124
Candida albicans	– Male		217	42	101	7	168	3	486	52
	– Female		1198	353	2068	577	163	40	3429	970
Pap Smear			877		371		0		1248	

Education Unit Activities

The Education Unit is responsible for STD/HIV/AIDS education throughout Alberta. This mandate is fulfilled in two ways, by direct education facilitated by nurse educators, and by nurse educators providing information and referral over the telephone for individual clients. In 1991 the Education Unit consisted of six nurse educators (four in Edmonton, two in Calgary) and a supervisor.

The total number of sessions presented in 1991 was 772, which is consistent with 763 in 1990. Of these, 32% were presented to students in elementary, junior and senior high, and 9% at the post secondary level. These numbers are similar to 1990 figures. Sessions within correctional institutions for inmates and staff remained constant at 4% in 1990 and 1991. Inservice education decreased from 33% in 1990 to 15% in 1991. The greatest decrease was seen in the hospital setting. An area of growth in 1991 was in-house consultations for clients, students and professionals. They represent 13% of the total number of sessions in 1991 compared to 8% in 1990. Sessions with life skills groups, both adults and adolescents, doubled from 5% in 1990 to 10% in 1991. Educational sessions for the general public also increased from 3% in 1990 to 5% in 1991. Displays have proven to be an excellent way to promote education and clinic services through display boards, pamphlets and videos for professionals, the public and students.

The attendance at sessions decreased 14% in 1991. This trend is to facilitate behavioral learning through the use of smaller group sessions. An adult education workshop model is primarily used.

During 1991, the Education Unit continued to be an active member of sexuality and HIV/AIDS education interagency committees in both Calgary and Edmonton. Involvement in these networks promotes STD services and has lead to participation in the development of low literacy level reading materials.

Calls on the computer-answered HIV/AIDS/STD Information Line (1-800-772-2437) increased. There was a 30% increase in calls over 1990. The number of calls are directly related to increased public awareness of HIV/AIDS/STD promoted largely by the media (Magic Johnson's announcement in early November is a good example). The accessibility to and acceptability of providing information in a free and confidential manner continues to be demonstrated by the increasing rate of calls, and the fact that people use the service 24 hours a day from all areas of the province.

Calls that are answered directly by nurse educators increased 9% over 1990.

Figure 11: Education Unit, Alberta 1986 – 1991

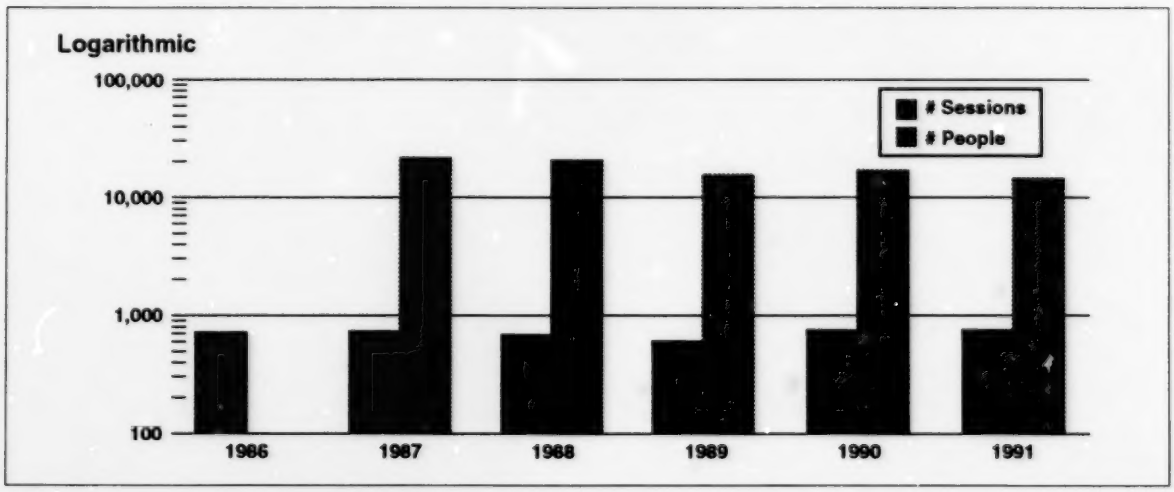


Table 17: Type of Education Session by Nurse Educators, Alberta 1991

	Number	Number of Participants
Schools		
Elementary	6	103
Junior High	128	3438
Senior High	115	3030
Post Secondary		
University	13	608
College	18	1283
Alberta Vocational Centre	7	121
NAIT/SAIT	7	291
Continuing Education	5	122
Nursing Schools	19	870
Inservice		
Hospital — professional	36	690
Hospital — support staff	14	248
Health Unit — professional	7	118
Health Unit — support staff	1	38
Sexual Health Nurses	1	3
Other health care workers	14	231
Teachers	6	74
Workplace	33	718
First Responders	5	142
Life Skills		
Adult	47	1082
Adolescent	29	334
General Public		
Adult	28	549
Adolescent	7	108
Correctional Institutions		
Inmates	18	180
Staff	16	291
In-House Consultation and Clinical Experience		
Nursing Students	34	87
Medical Students	50	47
Clients	89	116
STD Staff	12	25
Displays	7	not recorded
Total	**772**	**14947**
Presentations by Medical Staff	32	1458

Figure 12: Education Unit, Alberta, 1991

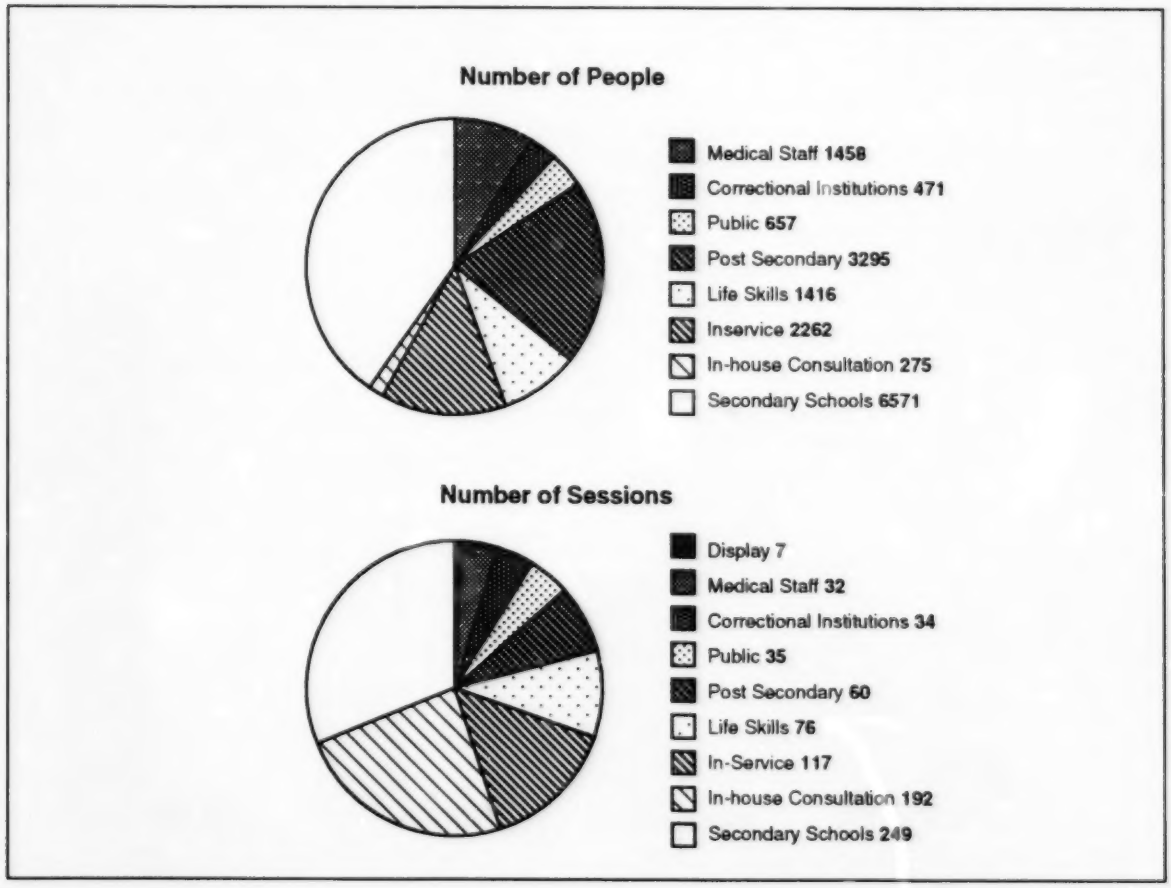


Figure 13: Nurse/Computer Answered Calls, Alberta, 1991

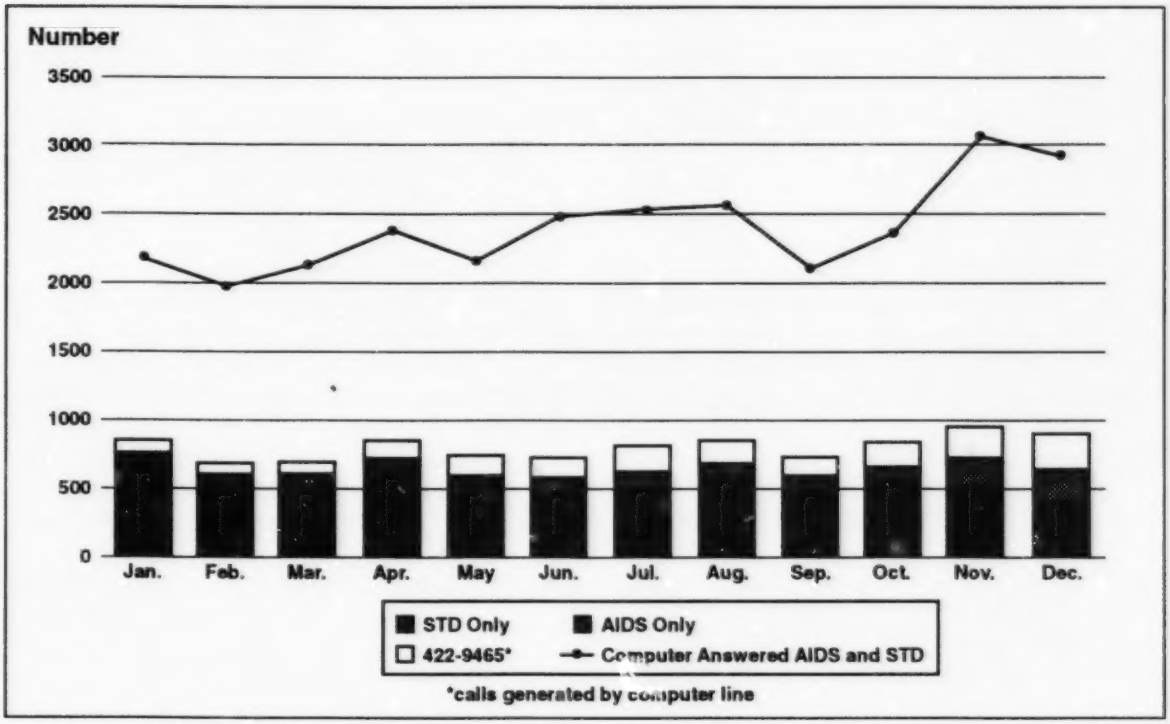
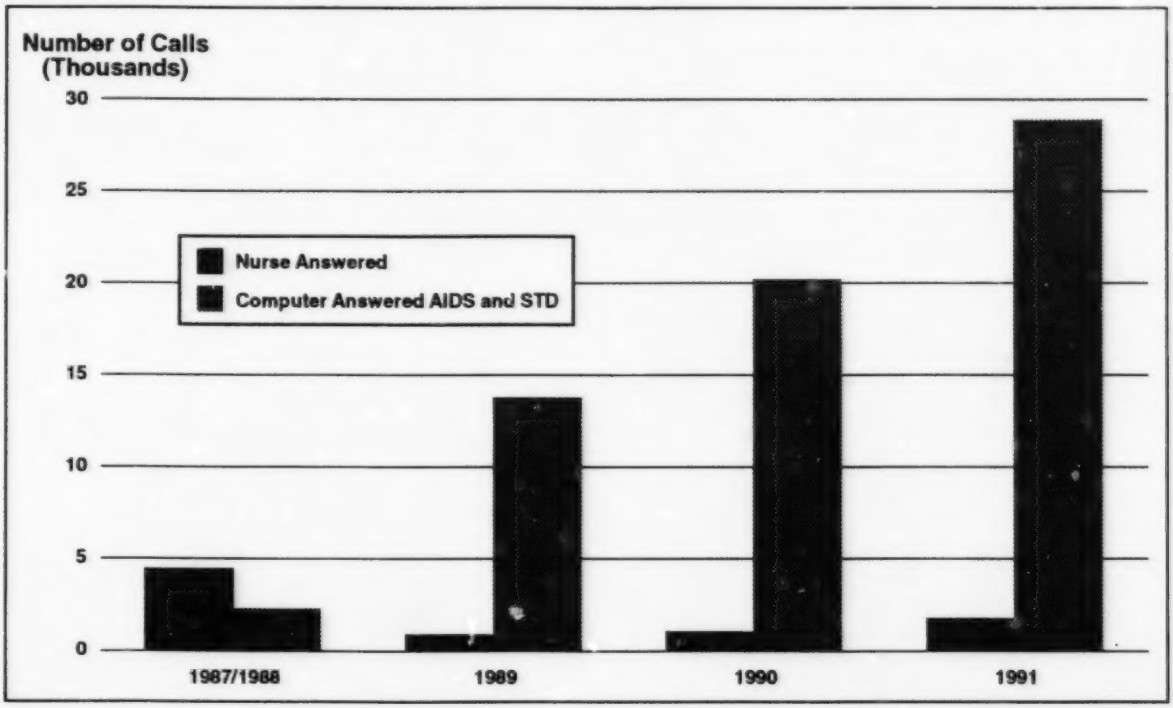


Figure 14: HIV/AIDS/STD Information Line, Alberta, 1987 – 1991



Research — Clinical Investigation Unit

During 1991, the following research projects were undertaken or completed by the Clinical Investigation Unit and/or the STD Clinics.

1. Clinical evaluation of oral itraconazole (R51,211) versus topical clotrimazole in the treatment of patients with acute vulvo-vaginal yeast infections.
   Principal investigator — Dr. B. Romanowski
   Co-investigator — Dr. D. Megran
   Sponsor — Janssen Pharmaceutica
   Participation — Edmonton and Calgary STD Clinics, CIU

2. Double-blind dose ranging study to assess the safety and efficacy of oral famciclovir (BRL 42810) in patients with first episode genital herpes infection.
   Principal investigator — Dr. B. Romanowski
   Sponsor — SmithKline Beecham Pharmaceuticals
   Participation — Edmonton STD Clinic, CIU

3. Descriptive study of contact tracing for gonococcal and nongonococcal urethritis.
   Principal investigator — Dr. E. Love, University of Calgary
   Co-investigators — Ruth Sutherland, Elizabeth Gourlie, Mary Rafter
   Sponsor — STD Research Fund
   Participation — Edmonton and Calgary STD Clinic

4. Sero-epidemiologic study to determine the risk of hepatitis B infection in a Canadian heterosexual STD population.
   Principal investigator — Dr. B. Romanowski
   Sponsor — SmithKline Beecham Pharmaceuticals
   Participation — Edmonton STD Clinic

5. Utilizing urine in the diagnosis of sexually transmitted diseases.
   Principal investigator — Hazel Talbot
   Sponsor — STD Research Fund
   Participation — CIU, Edmonton STD Clinic

6. Retrospective chart review of Pap Smears.
   Principal investigator — Patricia Campell, Sharyn Hewitt, Pamela Kowalchuk (posthumously)
   Co-investigators — Dr. M. Joffries, Dr. B. Romanowski
   Sponsor — STD Research Fund
   Participation — Edmonton STD Clinic, CIU

7. Evaluation of enzyme-immunoassay for *Chlamydia trachomatis* in genital specimens.
   Principal investigator — Dr. K. Fonseca
   Sponsor — Provincial Laboratory of Public Health for Southern Alberta
   Participation — Calgary STD Clinic

8. National *Neisseria gonorrhoeae* surveillance program.
   Principal investigator — Dr. Jo-Anne Dillon
   Sponsor — Laboratory Centre for Disease Control, Ottawa
   Participation — Edmonton and Calgary STD Clinics, CIU

9. Evaluation of the ADI Visuwell chlamydia EIA method in females.
   Principal investigator — Mr. E. Prasad
   Sponsor — Provincial Laboratory of Public Health, Edmonton
   Participation — Edmonton STD Clinic

10. Evaluation of Syva microtrak versus Kallestad chlamydia EIA method in males.
    Principal investigator — Mr. E. Prasad
    Sponsor — Provincial Laboratory of Public Health, Edmonton
    Participation — Edmonton STD Clinic

Appendices

Appendix 1 Cases of Notifiable Diseases by Age and Sex, Alberta, 1991

	< 1		1 – 4		5 – 9		10 – 14		15 – 19		20 – 24		25 – 29		30 – 39		40 – 59		60 +		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Neisseria gonorrhoeae	1			1			1	17	117	233	257	219	178	88	137	63	62	11	5		2	1	1393
Chlamydia trachomatis	2	4		3		1	1	87	307	2069	697	2016	362	690	234	336	46	46	2	6	4	23	6936
Non-gonococcal Urethritis/ Mucopurulent Cervicitis							4	13	251	311	726	336	576	179	517	179	165	48	17	1	45	18	3386
Syphilis (TOTAL)		1								3	3	1	8	1	18	5	10	5	8	11			74
Primary										2	1				2								5
Secondary													1			1	1						3
Early Latent												1	1		1	1							4
Late Latent										1	2		6	1	13	3	8	5	6	10			55
Late Unspecified																							
Neuro Syphilis															2		1		2	1			6
Congenital		1																					1
Total	**3**	**5**	**0**	**4**	**0**	**1**	**6**	**117**	**675**	**2616**	**1683**	**2572**	**1124**	**958**	**906**	**583**	**283**	**110**	**32**	**18**	**51**	**42**	**11789**

Neisseria gonorrhoeae Male 760 Female 633 — Non-gonococcal urethritis/mucopurulent cervicitis Male 2301 Female 1085 — Syphilis Male 47 Female 27 — *Chlamydia trachomatis* Male 1655 Female 5281

Appendices

Appendix 2: Cases of *Neisseria gonorrhoeae* According to Reporting Agency by Age and Sex, Alberta, 1991

	< 1		1 – 4		5 – 9		10 – 14		15 – 19		20 – 24		25 – 29		30 – 39		40 – 59		60 +		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physicians	1							12	76	165	158	158	104	57	69	45	28	8	3		1	1	886
Edmonton Clinic								1	15	25	38	23	32	5	37	4	18	2	1				201
Calgary Clinic									10	24	27	19	20	7	19	5	8		1				140
Ft. McMurray Clinic							1	1	6	3	10		8	3	3		2						37
Positive Cultures				1				3	10	16	24	19	14	16	9	9	6	1			1		129
Total	1	0	0	1	0	0	1	17	117	233	257	219	178	88	137	63	62	11	5		2	1	1393

Appendix 3: Cases of *Chlamydia trachomatis* According to Reporting Agency by Age and Sex, Alberta, 1991

	< 1		1 – 4		5 – 9		10 – 14		15 – 19		20 – 24		25 – 29		30 – 39		40 – 59		60 +		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physicians	2	1		1			1	70	195	1698	429	1686	221	588	139	282	31	34	1	5	3	19	5406
Edmonton Clinic									48	65	93	76	60	19	34	10	8	4	1				418
Calgary Clinic								1	33	59	99	69	44	20	34	13	5	1					378
Ft. McMurray Clinic								1	11	15	5	2	2	1	3								40
Positive Cultures		3		2		1		15	20	232	71	183	35	62	24	31	2	7		1	1	4	694
Total	2	4	0	3	0	1	1	87	307	2069	697	2016	362	690	234	336	46	46	2	6	4	23	6936

Appendix 4: Cases of Non-gonococcal Urethritis/Mucopurulent Cervicitis According to Reporting Agency by Age and Sex, Alberta, 1991

	< 1		1 – 4		5 – 9		10 – 14		15 – 19		20 – 24		25 – 29		30 – 39		40 – 59		60 +		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physicians							2	9	149	140	356	137	218	68	186	70	56	16	1	1	45	18	1472
Edmonton Clinic									59	88	211	97	218	55	215	54	71	19	13				1100
Calgary Clinic							2	1	34	63	148	90	119	48	105	47	37	13	3				710
Ft. McMurray Clinic								3	9	20	11	12	21	8	11	8	1						104
Total	0	0	0	0	0	0	4	13	251	311	726	336	576	179	517	179	165	48	17	1	45	18	3386